FACULTY OF ENGINEERING

B. E. 4/4 (CSE) I - Semester **(Old)** Examination, November / December 2009/Jan. 2010

Subject : **Distributed Systems**

Time : 3 Hours} {Max. Marks: 75

Note: Answer **all** questions from Part – A. Answer any **five** questions from Part-B.

PART – A (25 Marks)

1. Differentiate between multicomputer operating systems and multiprocessor operating systems. (2)
2. What is the need for an agent communication language ? What can be the different message types where it is used ? Explain. (3)
3. What distinguishes the X.500 implementation from the DNS implementation? (3)
4. What is the specific advantage of the two-phase locking protocol for concurrency control ? (2)
5. What are the differences in backward and forward recovery schemes ? (2)
6. List the services provided by CORBA. (3)
7. How is fault tolerance achieved in CODA file systems ? (3)
8. What are the basic design issues in the distributed shared memory systems? (2)
9. How is selection policy different from transfer policy is load distribution ? (2)
10. Explain basic concept of KERBEROS. (3)

PART – B (5x10=50 Marks)

11.(a) Give a comparison between distributed operating systems, network operating systems and middle ware based distributed systems specifically with regard to transparency, no. of copies of OS, Communication and resource management. (5)

(b) Differentiate between vertical distribution and horizontal distribution of the client-server architectures. (5)

12.(a) Explain the concepts of linking and mounting in distributed systems. (5)

(b) Explain the two-phase locking protocols for concurrency control. (5)

13.(a) Explain the quorum-based protocols as an approach to supporting replicated writes. (5)

(b) Explain how the write-ahead log in distributed transactions can be used to recover form failures. (5)

14.(a) How does CORBA system provide for fault tolerance ? Explain. (5)

(b) Explain the naming model in SUN NFS. (5)

15.(a) Discuss the advantages and disadvantages of these algorithms for implementing distributed shared memory.

(i) Central Server Algorithm
(ii) Read Replication Algorithm
(iii) Migration Algorithm (6)

(b) Explain the load distribution activity in sender initiated load distribution algorithm. (4)

16.(a) Briefly explain about secure group communication . (5)

(b) How is security ensured in electronic payment systems ? Explain. (5)

17. Write short notes on the following :

(a) Code migration (3)
(b) Client centric consistency (3)
© CODA file system (4)